Senate Judiciary Committee

"Attacking America's Epidemic of Heroin and Prescription Drug Abuse"

January 27, 2016

Questions for the Record for

Dr. Nora Volkow, National Institute on Drug Abuse

Chairman Charles E. Grassley

1. **The most recent Monitoring the Future Survey indicates that young people increasingly do not see great risk in, and do not disapprove of, regular marijuana use. Are you concerned that marijuana use by young people elevates their risk for other addictions later in life, such as abusing prescription painkillers and heroin? What does science tell us about this?**

Response: The Monitoring the Future (MTF) study has shown that the percent of students perceiving great risk in smoking marijuana regularly has been steadily decreasing over the last 10 years (from 58.0 percent in 2005 to 31.9 percent in 2015 among high school seniors). The percent disapproving of regular marijuana smoking has also declined over the last few years from 77.8 percent of high school seniors in 2012 to 70.7 percent in 2015.[1] However, while the perception that regularly smoking marijuana poses great risks once showed a strong inverse correlation with marijuana use among students, this correlation has not held in recent years; while perception of risks have continued to decline, marijuana use among students has been stable over the last few years.

NIDA continues to be concerned about all adolescent substance use, including marijuana. Research has shown that the use of substances that activate brain reward pathways including alcohol, cigarettes, and marijuana during adolescence is associated with higher rates of licit and illicit substance use and substance use disorders in adulthood and with progression of drug use.[2,3] The research suggests that early substance use alters reward circuits in the brain, heightening the response to other rewarding substances and increasing the individuals risk for addiction broadly. It is important to note that these studies have not established causation; other factors besides biological mechanisms, such as a person's social environment, are also critical in determining risk for drug use and may be common risk factors for later drug use trajectories.

NIDA is leading a collaborative effort, known as the Collaborative Research on Addiction at NIH, or "CRAN", in partnership with the National Institute of Alcohol Abuse and Alcoholism (NIAAA) and the National Cancer Institute (NCI), and other NIH partners, including the National Institute of Child Health and Human Development (NICHD), the National Institute

on Mental Health (NIMH), the National Institute on Minority Health and Health Disparities (NIMHD), the National Institute of Neurological Disorders and Stroke (NINDS), and the Office of Behavioral and Social Sciences Research (OBSSR). This large Adolescent Brain Cognitive Development (ABCD) study will track how a wide range of behavioral, genetic, and environmental factors including drug use during adolescence, interact and influence brain structure and function as well as life and health outcomes including mental illness and addiction. The longitudinal design of the study will allow us to draw more meaningful conclusions and connections, at the individual level, between key genetic and biological factors and behavioral, social, and environmental influences (including drug exposures) during the adolescence.

1. The University of Michigan Institute for Social Research. Monitoring the Future national survey results on drug use, 1975-2015: Overview, key findings on adolescent drug use. (2016). at http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2015.pdf

2. Swift, W. et al. Cannabis and progression to other substance use in young adults: findings from a 13-year prospective population-based study. J. Epidemiol. Community Health 66, e26–e26 (2012).

3. Arterberry, B. J., Horbal, S. R., Buu, A. & Lin, H.-C. The effects of alcohol, cannabis, and cigarette use on the initiation, reinitiation and persistence of non-medical use of opioids, sedatives, and tranquilizers in adults. Drug Alcohol Depend. 159, 86–92 (2016).

Senator Dianne Feinstein

1. **Prescriber Education**

As you know, doctors continue to prescribe opioids at an alarmingly high rate despite increases in opioid overdoses. And, as you stated, the pharmaceutical industry is often the entity educating healthcare professionals on prescribing practices, which is a conflict of interest. (Drug Enforcement Agency Office of Diversion Control, 2013)

You noted in both your written and oral testimony that National Institutes of Health and others have developed curriculum on the management of pain and proper prescribing of opioids and that your agency has helped to develop the Centers for Disease Control and Prevention's draft guidelines for prescribing opioids for chronic pain.

I share your belief that these two components are much-needed to help change how doctors prescribe opioids and manage pain. However, while many in the medical profession support voluntary prescriber education, they are resistant to mandated prescriber education, often citing lack of time, and therefore may not receive the

training they need. As noted in your written statement, only 100,000 clinicians of the 200,000 individuals that viewed the online training developed by your agency completed the courses for continuing medical education credit.

a. Given the high rates of both opioid prescriptions and opioid abuse, do you believe that it should be mandatory for prescribers to take classes on proper prescribing methods and recognizing and treating the signs and symptoms of substance abuse as a condition of obtaining and renewing their Drug Enforcement Administration registration to prescribe controlled substances? If not, why not? If you support a different compliance regime, what is it?

Response: While we recognize the concerns of medical professionals, NIDA does support mandatory education on management of pain, management including the proper prescription practices for opioid analgesics and education on screening and management of substance use disorders. Pain is very common, with millions of U.S. adults suffering from chronic pain and many more suffering from acute pain from illness or injury each year.[1] While the medical profession is often overburdened by competing priorities and requirements, pain is something that nearly every clinician needs the skills to address. However, pain management and identification and treatment of substance use disorders receive insufficient attention in medical training (on average 11 hours are spent training about pain in med school)[2] and after completing their residency many clinicians report feeling unprepared to address pain or substance use disorders.[3–5] Given that the opioid epidemic has been ongoing for more than a decade, claiming the lives of more than 28,000 Americans in 2014 alone,[6] it is imperative that we identify and implement more targeted solutions for addressing this crisis. Similarly, most clinicians do not feel competent to screen for substance use disorder or to recognize and intervene when a substance use disorder is emerging in their patients.

Continuing education (CE) initiatives have demonstrated improvement in knowledge and attitudes about pain and improved patient satisfaction with pain control.[7,8] CE on pain management is also important because research in this area is evolving rapidly allowing us to better understand the risks and benefits of opioid medications. For example, recent research suggests that chronic opioid treatment may facilitate the transition from acute to chronic pain by influencing the brain's processing of pain signals leading to heightened sensitivity to pain.[9,10] In addition, until recently it was believed that the risk for developing an opioid use disorder (OUD) was minimal for patients adhering to their doctor's recommendations. However, recent research has found that patients treated with opioids for chronic non-cancer pain have a significantly increased risk for developing an OUD. This risk increases with the dose and duration of opioid treatment, with 6.1 percent of patients receiving high dose opioid therapy developing an OUD. CE will ensure that providers are aware of the risks of chronic opioid treatment and encourage them to carefully balance the potential risks and benefits for each patient. Similarly, education of physicians will allow for adequate diagnosis and treatment of substance use disorders,[11] and may help reduce the public health impact of the opioid prescription epidemic.

It should also be noted that there is a precedent for mandatory education on opioid prescribing. Physicians are required to complete an extra 8 hours of training to be authorized to prescribe buprenorphine to treat opioid use disorders, yet buprenorphine is diverted less often[12] and because it is a partial agonist (producing weaker activation of the opioid receptor than full agonists such as oxycodone or hydrocodone), it poses a significantly lower risk for overdose.

1. Institute of Medicine (U.S.), ed. *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*. Washington, D.C: National Academies Press; 2011.

2. Mezei L, Murinson BB, Johns Hopkins Pain Curriculum Development Team. Pain education in North American medical schools. *J Pain Off J Am Pain Soc*. 2011;12(12):1199-1208. doi:10.1016/j.jpain.2011.06.006.

3. O'Rorke JE, Chen I, Genao I, Panda M, Cykert S. Physicians' comfort in caring for patients with chronic nonmalignant pain. *Am J Med Sci*. 2007;333(2):93-100.

4. Upshur CC, Luckmann RS, Savageau JA. Primary care provider concerns about management of chronic pain in community clinic populations. *J Gen Intern Med*. 2006;21(6):652-655. doi:10.1111/j.1525-1497.2006.00412.x.

5. Wakeman SE, Baggett MV, Pham-Kanter G, Campbell EG. Internal medicine residents' training in substance use disorders: a survey of the quality of instruction and residents' self-perceived preparedness to diagnose and treat addiction. *Subst Abuse*. 2013;34(4):363-370. doi:10.1080/08897077.2013.797540.

6. Rudd RA, Aleshire N, Zibbell JE, Gladden RM. Increases in Drug and Opioid Overdose Deaths - United States, 2000-2014. *MMWR Morb Mortal Wkly Rep*. 2016;64(50-51):1378-1382. doi:10.15585/mmwr.mm6450a3.

7. Paice JA, Barnard C, Creamer J, Omerod K. Creating organizational change through the Pain Resource Nurse program. *Jt Comm J Qual Patient Saf Jt Comm Resour*. 2006;32(1):24-31.

8. Curtis P, Carey TS, Evans P, Rowane MP, Jackman A, Garrett J. Training in back care to improve outcome and patient satisfaction. Teaching old docs new tricks. *J Fam Pract*. 2000;49(9):786-792.

9. Araldi D, Ferrari LF, Levine JD. Repeated Mu-Opioid Exposure Induces a Novel Form of the Hyperalgesic Priming Model for Transition to Chronic Pain. *J Neurosci Off J Soc Neurosci*. 2015;35(36):12502-12517. doi:10.1523/JNEUROSCI.1673-15.2015.

10. Joseph EK, Reichling DB, Levine JD. Shared Mechanisms for Opioid Tolerance and a Transition to Chronic Pain. *J Neurosci*. 2010;30(13):4660-4666. doi:10.1523/JNEUROSCI.5530-09.2010.

11. Wood E, Samet JH, Volkow ND. Physician Education in Addiction Medicine. *JAMA*. 2013;310(16):1673. doi:10.1001/jama.2013.280377.

12. Drug Enforcement Agency Office of Diversion Control. National ForensicLaboratory Information System (NFLIS) 2013 Annual Report. 2013. https://www.nflis.deadiversion.usdoj.gov/DesktopModules/ReportDownloads/Reports/NFLIS2013AR.pdf.